

# A method of mining virtual currency based on user's body reaction

## Abstract

translated from Korean

The present invention can provide a method of varying the amount of virtual currency mined according to the user's physical reaction.

In a virtual currency mining server according to a user's physical state according to an embodiment, the step of acquiring physical activity information from a user terminal; determining the user's physical condition based on the physical activity information; It may include outputting a signal for mining the virtual currency based on the user's physical condition.

## Classifications

■ [G06Q20/065](#) Private payment circuits, e.g. involving electronic currency used among participants of a common payment scheme using e-cash

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## Claims (5)

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translated from Korean

In the virtual currency mining server according to the user's physical condition, Obtaining physical activity information from a user terminal;

determining the user's physical condition based on the physical activity information;  
Including; outputting a signal for mining the virtual currency based on the user's physical condition,  
The physical activity information includes at least one of the user's brain wave information, pulse rate information, body temperature information, pupil movement information, and breathing pattern information,  
Further comprising: determining a sleep state based on the user's physical state,  
The step of outputting a signal for mining the virtual currency based on the user's physical state,  
Comprising: setting the mining weight of the virtual currency differently according to the sleep state,  
The user's sleep state is classified into stage N sleep based on at least one of the brain wave information, pulse rate information, body temperature information, pupil movement information, and breathing pattern information,  
The step of outputting a signal for mining the virtual currency based on the user's physical state,  
Setting the mining weight of virtual currency differently according to the N stage sleep;  
It includes; determining the amount of virtual currency mining in proportion to the mining weight,  
The N represents an integer of 1 or more,  
The amount of virtual currency mining can be derived by the following equation 1,  
[Equation 1]

remind may represent the amount of virtual currency mining. The b represents the N, and the represents the sleep compensation value corresponding to the ath sleep state,  
The sleep compensation value represents the virtual currency compensation value obtained through sleep,  
remind represents a weight for each stage of sleep, the sleep compensation value represents a basic compensation given to the user, the sleep compensation value is set differently depending on the region where the user is located, and is the breathing rate obtained based on the breathing pattern information, and represents a weight between 1 and 24,  
represents the time corresponding to the ath sleep state,  
remind is proportional to the number of breaths during a pre-specified time, and the pre-specified time is based on the user's usual breathing cycle and the user's usual sleeping state breathing cycle so that the user's respiratory number is 24 or less during the pre-specified time A virtual currency mining server based on the user's physical condition is set.  
According to paragraph 1,  
A virtual currency mining server according to the user's physical condition, where N is an integer of 5 or more.

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## Description

translated from Korean

Virtual currency mining method based on user's body reaction {A METHOD OF MINING VIRTUAL CURRENCY BASED ON USER'S BODY REACTION}

The present invention relates to a method of mining virtual currency based on the user's body reaction.

Virtual currency (virtual currency or virtual money) refers to digital currency or electronic money used in electronic form in a specific virtual community connected to a network without physical objects such as banknotes or coins. According to the definitions given by the European Central Bank (ECB), the U.S. Treasury, and the European Banking Supervisory Authority, virtual currency is a type of digital currency that is not controlled by the government, is issued and managed by developers, and is a payment method used only in specific virtual communities.

Most blockchain-based cryptocurrencies are decentralized in the sense that there is no central point of control, but blockchain-based cryptocurrencies can also be implemented in a centralized system where there is a central point of control for the cryptocurrency. Blockchain is a data structure that stores a list of transactions and is a distributed electronic device that records transactions between source identifier(s) and destination identifier(s). Computer resources (or nodes, etc.) can maintain the blockchain and cryptographically verify each new block and the transactions contained in that block. Accordingly, as interest in blockchain-based cryptocurrency increases, research on methods to mine it is also actively conducted. In particular, mining virtual currency requires a lot of electrical power consumption and device load, so it may be necessary to efficiently distribute

work in this regard. In addition, research is actively underway to vary the mining weight of virtual currency according to the user's physical activity.

The present invention can provide a method of varying the amount of virtual currency mined according to the user's physical reaction.

In a virtual currency mining server according to a user's physical state according to an embodiment, the step of acquiring physical activity information from a user terminal; determining the user's physical condition based on the physical activity information; It may include outputting a signal for mining the virtual currency based on the user's physical condition.

Physical activity information according to one embodiment may include the user's brain wave information, pulse rate information, body temperature information, pupil movement information, and breathing pattern information.

In one embodiment, the virtual currency mining server according to the user's physical state further includes the step of determining a sleeping state based on the user's physical state, and a signal for mining the virtual currency based on the user's physical state. The step of outputting may include setting the mining amount of the virtual currency differently depending on the sleep state.

The user's sleep state according to one embodiment is classified into stage 1 sleep, stage 2 sleep, and stage 3 sleep based on the brain wave information, pulse rate information, body temperature information, and breathing pattern information, and is classified into stage 1 sleep, stage 2 sleep, and stage 3 sleep based on the user's physical state. The step of outputting a signal for mining virtual currency may include setting different mining amounts of virtual currency in the first stage sleep, the second stage sleep, and the third stage sleep.

Classifying the user's sleep state as the first stage sleep according to an embodiment; is a step of classifying the user's pupil at a predetermined first distance or more for a predetermined first time based on the user's pupil movement information. If the user moves more than once, the user's breathing frequency is less than a predetermined cycle based on the user's breathing information, and the user's breathing sound is more than a predetermined decibel, the user's sleep state is classified as first stage sleep. It may include;

The present invention can maximize user satisfaction by varying the user's virtual currency mining amount according to the user's sleep pattern.

The present invention can improve the efficiency of virtual currency mining by analyzing the user's sleep pattern and then mining virtual currency through it.

The accompanying drawings, which are included as part of the detailed description to aid understanding of the various embodiments, provide various embodiments and, together with the detailed description, describe technical features of the various embodiments.

1 is a diagram illustrating the operation of a processor according to one embodiment.

Figure 2 is a diagram illustrating the operation of a server according to an embodiment.

Figure 3 is a flowchart illustrating the operation of setting the mining amount of virtual currency differently according to one embodiment.

Figure 4 is a flowchart illustrating the operation of setting the mining amount differently depending on the sleep stage according to one embodiment.

Figure 5 is a diagram illustrating an operation of mining virtual currency according to a user's sleep state according to an embodiment.

Since the present invention can make various changes and have various embodiments, specific embodiments will be illustrated in the drawings and described in detail in the detailed description. However, this is not intended to limit the present invention to specific embodiments, and should be understood to include all changes, equivalents, and substitutes included in the spirit and technical scope of the present invention. While describing each drawing, similar reference numerals are used for similar components.

Terms such as first, second, A, B, etc. may be used to describe various components, but the components should not be limited by the terms. The above terms are used only for the purpose of distinguishing one component from another. For example, a first component may be named a second component, and similarly, the second component may also be named a first component without departing from the scope of the present invention. The term "and/or" includes any combination of a plurality of related stated items or any of a plurality of related stated items.

When a component is said to be "connected" or "connected" to another component, it is understood that it may be directly connected to or connected to the other component, but that other components may exist in between. It should be. On the other hand, when it is mentioned that a component is "directly connected" or "directly connected" to another component, it should be understood that there are no other components in between.

The terms used in this application are only used to describe specific embodiments and are not intended to limit the invention. Singular expressions include plural expressions unless the context clearly dictates otherwise. In this application, terms such as "comprise" or "have" are intended to designate the presence of features, numbers, steps, operations, components, parts, or combinations thereof described in the specification, but are not intended to indicate the presence of one or more other features. It should be understood that this does not exclude in advance the possibility of the existence or addition of elements, numbers, steps, operations, components, parts, or combinations thereof.

Unless otherwise defined, all terms used herein, including technical or scientific terms, have the same meaning as commonly understood by a person of ordinary skill in the technical field to which the present invention pertains. Terms defined in commonly used dictionaries should be interpreted as having a meaning consistent with the meaning in the context of the related technology, and unless explicitly defined in the present application, should not be interpreted in an ideal or excessively formal sense. No.

Hereinafter, preferred embodiments of the present invention will be described in more detail with reference to the attached drawings. In order to facilitate overall understanding when describing the present invention, the same reference numerals are used for the same components in the drawings, and duplicate descriptions of the same components are omitted.

Figure 1 is a diagram illustrating the operation of a processor belonging to the server 100 according to an embodiment. Looking specifically at FIG. 1, at least one processor 110 may be a central processing unit (CPU), a graphics processing unit (GPU), or a dedicated processor on which methods according to embodiments of the present invention are performed. It may mean a processor. Each of the memory 120 and the storage device 160 may be comprised of at least one of a volatile storage medium and a non-volatile storage medium. For example, the memory 120 may be one of read only memory (ROM) and random access memory (RAM), and the storage device 160 may be flash memory, a hard disk drive (HDD), a solid state drive (SSD), or various memory cards (eg, micro SD card).

Additionally, the server 100 may be included in the server and may include a transceiver 130 that performs communication through a wireless network. Additionally, the server 100 may further include an input interface device 140, an output interface device 150, a storage device 160, etc. Each component included in the server 100 is connected by a bus 170 and can communicate with each other.

Figure 2 is a diagram illustrating the operation of a server according to an embodiment.

Looking at Figure 2 in detail, in the virtual currency mining server 100 according to the physical state of the user 10, physical activity information 12 can be obtained from the user terminal 11, and based on the physical activity information. Thus, the physical state of the user 10 can be determined, and a signal for mining the virtual currency can be output based on the physical state of the user 10. The virtual currency mining server 100 is a server 100 that can mine virtual currency according to the physical state of the user 10. Here, mining refers to virtual currency, for example, a public ledger of Bitcoin called a blockchain. It refers to the process of adding transaction records, and mining can refer to the act of creating a block recording the transaction details of a



cryptocurrency and obtaining cryptocurrency in return. At this time, it can represent the process of leaving performance records using computer processing power. Here, blockchain can represent a distributed public ledger in which all virtual currency transactions such as Bitcoin are recorded. Cryptocurrency stores ledgers recording transaction details distributed across a global network without an issuing agency such as a central bank. In order to maintain this blockchain, it is designed to pay a certain amount of compensation to the person who created the block. there is. For example, in the case of Bitcoin, a new block is created once every 10 minutes, and the person who finds the hash of this block's name, a total of 64 characters expressed in hexadecimal, will be paid by issuing Bitcoin. You can. At this time, cryptocurrency mining can be performed directly on the server 100 capable of mining virtual currency, and a signal to mine virtual currency can be output using an external server.

The physical activity information 12 may include brain wave information, pulse rate information, body temperature information, pupil movement information, and breathing pattern information of the user 10. The brain wave information, pulse rate information, body temperature information, pupil movement information, and breathing pattern information of the user 10 are acquired from the user terminal 11, or the brain wave information of the user 10 is acquired using another device and then transferred to the user terminal. It can be obtained through the information sent to (11). Additionally, physical activity information has a broad meaning and may include personal information, health information, and disease information of the user 10. In other words, the mining amount of virtual currency can be set to vary depending on the user's 10 health condition, disease condition, or preferred information. Mining virtual currency can be done by universal methods. In one embodiment, as a proof-of-work (POW) method, data can also be processed through hash processing, which is a data processing method, and a mining machine such as a graphics card can be used in this process. In addition, you can also use POS (Proof of Stake), which indicates that you have a stake in the coin and have the authority to create blocks with your stake, and are compensated with interest for this. In addition, currency can be mined through the user terminal 11, and this is not limited to a specific method and can be done through various methods, and can be a universal method.

Figure 3 is a flowchart illustrating the operation of setting the mining amount of virtual currency differently according to one embodiment.

Looking at Figure 3 in detail, the server can obtain physical activity information (301), determine the physical state (302), determine the sleep state (303), and output a virtual currency mining signal ( 304) You can. As described in detail later, a signal can be output to vary the amount of virtual currency mining depending on the sleep state, and at this time, the sleep state can be set differently depending on the amount of sleep, breathing rate, brain wave information, and degree of pupil movement. there is.

Figure 4 is a flowchart illustrating the operation of setting the mining amount differently depending on the sleep stage according to one embodiment.

Looking at Figure 4 in detail, the vertical axis of the graph is a sleeping state, and the height toward the top of the vertical axis indicates a awake state (light sleep state), and the right side of the horizontal axis is a concept of time, and in one embodiment, it is 12 o'clock. It may apply to 7 a.m., but is not limited to this. The user falls asleep from awakening, i.e., waking state, to rem sleep (first sleep state) 23 and then gradually into second sleep state 24, third sleep state, fourth sleep state 25, and fifth sleep state. You can fall asleep in sleep state (26). Although the third sleep state is not shown in the drawing, it may correspond to a state in which one falls asleep less than the standard value of falling into a deep sleep, which is the SWS (slow wave sleep) level (22), which will be described later, but is not limited to this. It may correspond to a more sleepy state. The sleep-wake cycle can be delicately controlled by the body's circadian rhythm, in which homeostatic processes and changes in daylight conditions play an important role. Prolonged periods of wakefulness or high loads on the body (resulting from large amounts of vigorous physical activity according to one embodiment) may increase the homeostatic drive for sleep and increase restorative deep sleep the next night. At this time, as the value of n in the nth state increases, it may indicate a deeper state of sleep. At this time, sleep onset latency (SOL) 20 may indicate a lightly asleep state, which may mainly indicate the user's state within a specific first time after falling asleep. The Brief Awakening state (21) may indicate a temporary waking state, that is, a light sleep state, and

the SWS (slow wave sleep) level (22) may indicate a baseline level of falling into a deep sleep. The graph represents each sleep state, and as described above, virtual currency can be mined with different weight amounts depending on each sleep state. At this time, mining virtual currency can be done using a universal method.

Figure 5 is a diagram illustrating an operation of mining virtual currency according to a user's sleep state according to an embodiment.

Looking at Figure 5 in detail, the server can classify the user's sleep state into sleep states 1 to 5 (501), and set mining weights differently according to the classified sleep (502).

The server may determine the sleep state based on the user's physical state. At this time, the sleep state can be classified into stage 1 sleep, stage 2 sleep, stage 3 sleep, stage 4 sleep, and stage 5 sleep based on brain wave information, pulse rate information, body temperature information, pupil movement information, and breathing pattern information, as described later. It is not limited to this and may be classified as level 3, level 4, or level 6 or higher. The server may set the mining amount of the virtual currency differently depending on the sleep state.

The user's sleep state is classified into stage 1 sleep, stage 2 sleep, stage 3 sleep, stage 4 sleep, and stage 5 sleep based on the brain wave information, pulse rate information, body temperature information, pupil movement information, and breathing pattern information, and the user's Outputting a signal to mine the virtual currency based on the physical state sets the mining amount of virtual currency differently depending on the stage 1 sleep, the stage 2 sleep, the stage 3 sleep, the stage 4 sleep, and the stage 5 sleep. You can. Pupil movement information during sleep can be obtained through a universal method, and can also be obtained through information stored in the user terminal.

At this time, the user's sleep state is not limited to the above and sleep may be classified according to the following conditions. A method can be used to recognize the weight of each section by using sound recordings during breathing and sleep, including brain waveforms or heart rate, and to differentiate them accordingly and mine them in the form of technology proof.

Stages 1 to 5 sleep may be classified according to the following criteria. The first stage may represent REM (REM) sleep. Classification as stage 1 sleep means that the user's pupil moves more than a predetermined first distance for a predetermined first time based on the user's pupil movement information, and the user's pupil moves more than a predetermined first time based on the user's breathing information. If the user's breathing frequency is less than a predetermined cycle and the user's breathing sound is more than a predetermined decibel, the user's sleep state can be classified as first stage sleep.

In one embodiment, the corresponding virtual currency mining weight (hereinafter referred to as mining weight) may correspond to 1.5. At this time, the first stage of sleep can be achieved by brain waves corresponding to gamma waves (30 Hz to 45 Hz), and is characterized by a fast brain wave cycle and frequent eye movements, making it possible to utilize the section where brain activity is active and dreaming. At this time, the average heart rate can be approximately 60 to 90 bpm, and although brain activity and eye movement are active, the heart rate increases, but may still be lower than the early stage of sleep.

Stage 2 sleep may represent NREM (non-REM) sleep. In one embodiment, the mining weight of the second stage of sleep may be set to 1.0, and in this case, the brain waves may be alpha waves (8 to 13 Hz). At this time, the section where muscle tension decreases and fast and small brain waves appear as fast and irregular brain waves can be used, and the average heart rate can be approximately 60 to 100 bpm. Heart rate may empirically be faster in the early stages of sleep, but generally may utilize higher zones than normal sleep states.

The third sleep stage may represent NREM2 (Stage2) sleep, and in one embodiment, the mining weight may correspond to 1.3. At this time, the brain waves can be theta waves (4~7 Hz), and are a mixture of fast brain wave cycles (spindles) and delta brain wave cycles, so the brain waves become more complex, and the middle stage without eye movement is the section where dreaming begins. It can be utilized. At this time, the average

heart rate: may be approximately 60 to 100 bpm, and a section where the heart rate decreases slightly and stabilizes within the normal range can be utilized.

The fourth sleep stage may be NREM3 (Stage3). In one embodiment, the mining weight may be 1.7, and brain waves may be delta waves (0.5 to 0.7 Hz). At this time, the delta brain wave cycle can be mainly used as a section where muscle tension is further reduced and the body enters a deep sleep state, and the average heart rate can be approximately 40 to 60 bpm. At this time, the heart rate is lowest and most stable during the deep sleep stage. The lowest heart rate range within the normal range can be used.

The fifth sleep stage may be the NREM4 (Stage4) stage, and in one embodiment, the mining weight may be 1.9. Brain waves can be delta waves (0.5 to 0.7 Hz), and can mainly be used as a delta brain wave cycle, where muscle tension is further reduced and the body enters a deep sleep state. At this time, the average heart rate can be approximately 40 to 60 bpm, and the heart rate is lowest and most stable during the deep sleep stage. The lowest heart rate range within the normal range can be used.

A weight according to the total amount of sleep may be added to the total of five stages, or the following weight may be added. It can be set to give more additional weight as the amount of sleep increases. At this time, as an example, the first hour can be set to correspond to the mining weight total sleep amount \* 1.0 when sleeping less than 4 hours, and the second hour more than the first hour, for example, when sleeping less than 6 hours, the mining weight sleep total amount \* 1.38. It can be set to be added, and in the third hour, which is more than the second hour, in one embodiment, when sleeping less than 8 hours, a weight of mining weight sleep total amount \* 1.7 can be set to be added, and in the fourth hour, which is more than the third hour, the work is carried out. For example, when sleeping for more than 10 hours, a weight equivalent to the mining weight total amount of sleep \* 2.0 can be set to be added. Additionally, the weight for each sleep stage can be set to increase during a specific period.

In one embodiment, the mining weight can be set to \*3.0 during the REM sleep section. At this time, the above-mentioned embodiments only correspond to one embodiment and are not limited thereto. Additionally, you can declare a sleep target time for a specific week or month and set the mining weight to increase when the target is achieved. Additionally, the mining increment can be set to increase when holding a specific NFT (Non-Fungible Token).

Additionally, the mining weight can be set to increase when beneficial sounds are produced or provided to the user while sleeping. At this time, the useful sound may represent a pre-designated sound.

At this time, the amount of virtual currency mining can be determined by Equation 1 below.

[Equation 1]

remind may represent the amount of virtual currency mining. The b may represent the number of sleep states including the first sleep state, the second sleep state, the third sleep state, the fourth sleep state, and the fifth sleep state, and in one embodiment, 5 sleep states. It can be expressed. remind represents the sleep reward corresponding to the ath sleep state, which may represent the virtual currency reward value obtained through sleep. At this time, the sleep compensation is the basic compensation given to the user and can be set to be differentiated for each situation depending on the period and region, etc., and may also be a fixed value. In one embodiment, it may be fixed to 1.

remind represents sleep stages, and may represent a weight corresponding to the ath sleep state in the above embodiment. As described above, by setting different weights depending on the sleep state, mining profits in that time period can be weighted average. In one embodiment, REM, the first sleep state, has a weight of 1.5, NREM1, the second sleep state, has a weight of 1.0, NREM2, the third sleep state, has a weight of 1.3, NREM3, the fourth sleep state, has a weight of 1.7, and the fifth sleep state. It can be set to NREM4 = weight 1.9. The calculation result in Equation 1 can be converted to a square root through the root function (sqrt). remind may represent a random weight between respiratory rates 1 and 24 based on the breathing pattern information. At this time, virtual currency mining profits can be added differentially according to the average breathing rate

preset through user information. remind is number a above?? It can indicate the time corresponding to the sleep state.

remind can be derived by Equation 2 as follows.

[Equation 2]

remind may represent the number of breaths during a pre-specified time. At this time, the pre-designated time may be determined based on the user's usual breathing cycle and the user's usual breathing cycle in a sleeping state. The predetermined time may be set so that the user's respiratory rate is 24 or less during the predetermined time based on the user's usual breathing cycle and the user's usual sleeping state breathing cycle. remind may represent a weight corresponding to the ath sleep state.

Using this formula, you can control mining activities by focusing on the desired stage and change the expected profit through individual breathing rate weighting. As described above, differentiated mining values for each individual can be obtained through the combined weight, root function, and other variables.

At this time, once the virtual currency mining amount is determined, the server can output a signal to mine the corresponding virtual currency mining amount. The amount of virtual currency mining is not limited to this and may be proportional to the number of pupil movement information, and the amount may be set differently depending on body temperature, and the amount may be set differently depending on the state of brain waves or health.

In one embodiment, it can be set to mine more if it corresponds to brain waves of a certain frequency, and can be set to mine more if the user's body is judged to be healthier. In addition, if the user's body temperature is within a certain body temperature range, it can be set to mine more. It can be set to mine a large amount.

In addition, the amount of virtual currency mining can also be determined by comparing the user's sleep with the user's usual sleep pattern.

In one embodiment, the user's sleep pattern is obtained for a certain predetermined period and the sleep pattern is determined as an average or a user-specified value (in one embodiment, the user's average REM sleep time, breathing level during REM sleep, and body temperature, degree of pupil movement, heart rate, etc.) In comparison, if you sleep more deeply than usual, the amount of mining can be increased, and if you sleep more lightly than usual, the amount of mining can be reduced. At this time, if you sleep deeper or lighter than usual, you can set the mining amount to change more or less depending on the difference in degree. At this time, it is not limited to the above embodiment, but on the contrary, if you sleep deeply, the amount of mining can be reduced. In addition, mining can be set to be possible only at a specific time set by the user, and in conjunction with the user's schedule information, the mining amount can be reduced, reduced, or not mined according to the user's pre-designated date, event schedule, or specific user designation. In addition, the mining amount can be set to change by reflecting trends based on SNS information and news information obtained from specific events or external servers. In one embodiment, if the stock market index rises or falls above a certain standard, or if information about a specific content rises more than a certain number for a certain time due to news information, the mining amount can be set to decrease or decrease.

The server can classify sleep states into first to fifth stage sleep states (501) and set mining weights differently depending on the classified sleep (502).

Methods according to the present invention may be implemented in the form of program instructions that can be executed through various computer means and recorded on a computer-readable medium. Computer-readable media may include program instructions, data files, data structures, etc., singly or in combination. Program instructions recorded on a computer-readable medium may be specially designed and constructed for the present invention or may be known and usable by those skilled in the computer software art.

Examples of computer-readable media may include hardware devices specifically configured to store and execute program instructions, such as ROM, RAM, flash memory, etc. Examples of program instructions may

include machine language code such as that created by a compiler, as well as high-level language code that can be executed by a computer using an interpreter, etc. The above-described hardware device may be configured to operate with at least one software module to perform the operations of the present invention, and vice versa.

Additionally, the above-described method or device may be implemented by combining all or part of its components or functions, or may be implemented separately.

Although the present invention has been described above with reference to preferred embodiments, those skilled in the art may make various modifications and changes to the present invention without departing from the spirit and scope of the present invention as set forth in the claims below. You will understand that you can do it.

Methods according to the present invention may be implemented in the form of program instructions that can be executed through various computer means and recorded on a computer-readable medium. Computer-readable media may include program instructions, data files, data structures, etc., singly or in combination. Program instructions recorded on a computer-readable medium may be specially designed and constructed for the present invention or may be known and usable by those skilled in the computer software art.

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11: User terminal

Patent Citations (3)

Publication number	Priority date	Publication date	Assignee	Title
<a href="#">US20200097951A1</a> *	2018-09-21	2020-03-26	Microsoft Technology Licensing, Llc	Cryptocurrency system using body activity data
<a href="#">KR20220057677A</a> *	2020-10-29	2022-05-09	경상국립대학교 산학협력단	System and device for determining sleep stages based on deep-learning
<a href="#">KR20230080879A</a> *	2021-11-30	2023-06-07	김정태	System and method for rewarding for physical activity based on block chain
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Publication	Publication Date	Title
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<a href="#">Garavaglia et al.</a>	2012	Technological regimes and demand structure in the evolution of the pharmaceutical industry
<a href="#">Haveman et al.</a>	2000	Has macroeconomic performance regained its antipoverty bite?
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<a href="#">KR102737399B1</a>	2024-12-03	Apparatus and method for metaverse service based on circadian rhythm
<a href="#">JP7449431B1</a>	2024-03-13	Program, method, information processing device, system
<a href="#">JP7360232B2</a>	2023-10-12	Game system, game method, game program, and information processing device
<a href="#">Bolin et al.</a>	2006	The significance of overweight and obesity for individual health behaviour: An economic analysis based on the Swedish surveys of living conditions 1980–81, 1988–89, and 1996–97
<a href="#">JP7381045B2</a>	2023-11-15	Lifestyle expression device, lifestyle expression method, program and recording medium

Publication	Publication Date	Title
<a href="#">TW202423365A</a>	2024-06-16	Information processing device, information processing method, and program
<a href="#">Watson et al.</a>	2018	Social class and conversion capacity: deprivation trends in the Great Recession in Ireland
<a href="#">Basu</a>	2022	Where Classical Ends, Keynes Proceeds: Arguments Under the Perspective of Reviving India from the Impact of COVID-19
<a href="#">Phelps</a>	2024	Rebuilding macroeconomic theory from Keynes' original ideas-a minimal model of the economy with confidence and debt causing business cycles

### Priority And Related Applications

#### Priority Applications (2)

Application	Priority date	Filing date	Title
<a href="#">KR1020230133848A</a>	2023-10-07	2023-10-07	A method of mining virtual currency based on user's body reaction
<a href="#">PCT/KR2023/016514</a>	2023-10-07	2023-10-23	Method for mining virtual currency according to physical reaction of user

#### Applications Claiming Priority (1)

Application	Filing date	Title
<a href="#">KR1020230133848A</a>	2023-10-07	A method of mining virtual currency based on user's body reaction

### Legal Events

Date	Code	Title	Description
2023-10-07	PA0109	Patent application	<b>Patent event code:</b> PA01091R01D <b>Comment text:</b> Patent Application <b>Patent event date:</b> 20231007
2023-10-07	PA0201	Request for examination	
2023-10-07	PA0302	Request for accelerated examination	<b>Patent event date:</b> 20231007 <b>Patent event code:</b> PA03022R01D <b>Comment text:</b> Request for Accelerated Examination
2023-12-13	PE0902	Notice of grounds for rejection	<b>Comment text:</b> Notification of reason for refusal

Date	Code	Title	Description
			<b>Patent event date:</b> 20231213 <b>Patent event code:</b> PE09021S01D
2024-04-09	E701	Decision to grant or registration of patent right	
2024-04-09	GRNT	Written decision to grant	
2024-04-09	PE0701	Decision of registration	<b>Patent event code:</b> PE07011S01D <b>Comment text:</b> Decision to Grant Registration <b>Patent event date:</b> 20240409
2024-04-09	PR0701	Registration of establishment	<b>Comment text:</b> Registration of Establishment <b>Patent event date:</b> 20240409 <b>Patent event code:</b> PR07011E01D
2024-04-09	PR1002	Payment of registration fee	<b>Payment date:</b> 20240409 <b>End annual number:</b> 3 <b>Start annual number:</b> 1
2024-04-12	PG1601	Publication of registration	

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